BRUHAT BANGALORE MAHANAGARA PALIKE

Name of the Work : 16. Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

BYATARAYANAPURA DIVISION

TEST REPORT

1st & Part bill

TEJUS
CONSULTANTS

GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Project:Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	28/07/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	**Date of Sampling:**	28/07/2018
Type of material & Purpose:	WMM	**Date of testing:**	28/07/2018
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	359	332	3.32	96.68	95-100
22.4	2396	2729	27.29	72.71	60-80
11.2	1774	4527	45.27	54.73	40-60
4.75	1685	6260	62.60	37.40	25-40
2.36	1164	7325	73.25	26.75	15-30
0.6	1294	8626	86.26	13.74	8.0-22.0
0.075	954	9653	96.53	3.47	0-8
Pan	347				
Total	10000				

ಸಹಾಯಕ ಅಭಿಯಂತರರು
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Authorised Signatory

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ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Project;Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	28/07/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	**Date of Sampling:**	28/07/2018
Type of material & Purpose:	WMM	**Date of testing:**	28/07/2018
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	337	337	3.37	96.63	95-100
22.4	2217	2554	25.54	74.46	60-80
11.2	1738	4292	42.92	57.08	40-60
4.75	1897	6189	61.89	38.11	25-40
2.36	1365	7554	75.54	24.46	15-30
0.6	1214	8768	87.68	12.32	8.0-22.0
0.075	921	9689	96.89	3.11	0-8
Pan	311				
Total	10000				

ಸಹಾಯಕ ಅಭಿಯಂತರರು
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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Project;Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Type of Material	WMM	**Proposed Use**	WMM
Sample Location	At plant	**Date of Sampling**	28/07/2018
		Date of Testing	28/07/2018

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	905	83	899	83
16.0	12.5	1029	99	1011	117
12.5	10.0	483	87	411	60
10.0	6.3	534	77	465	37
Total		**2951**	**346**	**2786**	**297**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.72	
Elongation Index(%):	10.66	
Combined FI+EL (%)	22.39	

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ಸಹಾಯಕ ಕಾರ್ಯ. ಪಾಲಿಕೆ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ.
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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	Project:Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Sri. M. S. Venkatesh		
Proposed Use	WMM	**Date of Sampling**	28/07/2018
Sample Location	At plant	**Date of Testing**	28/07/2018

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	383.00	375.00	372.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	298.00	275.00	295.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	85.00	100.00	77.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	22.19	26.67	20.70	
5	Average Aggregate impact value	(%)	23.19			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	Project:Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Sri. M. S. Venkatesh		
Proposed Use	WMM	**Date of Sampling**	30/07/2018
Sample Location	At plant	**Date of Testing**	30/07/2018

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	384.00	374.00	372.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	298.00	274.00	294.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	86.00	100.00	78.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	22.40	26.74	20.97	
5	Average Aggregate impact value	(%)	23.37			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Project:Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Type of Material	WMM	**Proposed Use**	WMM
Sample Location	At plant	**Date of Sampling**	30/07/2018
		Date of Testing	30/07/2018

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	907	75	870	97
16.0	12.5	1196	117	1129	99
12.5	10.0	556	87	452	71
10.0	6.3	582	88	530	63
Total		**3241**	**367**	**2981**	**330**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.32
Elongation Index(%):	11.07
Combined FI+EL (%)	22.39

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TEJUS
CONSULTANTS

GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Project;Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	30/07/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	**Date of Sampling:**	30/07/2018
Type of material & Purpose:	WMM	**Date of testing:**	30/07/2018
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	337	337	3.37	96.63	95-100
22.4	2217	2554	25.54	74.46	60-80
11.2	1738	4292	42.92	57.08	40-60
4.75	1897	6189	61.89	38.11	25-40
2.36	1365	7554	75.54	24.46	15-30
0.6	1214	8768	87.68	12.32	8.0-22.0
0.075	921	9689	96.89	3.11	0-8
Pan	311				
Total	10000				

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ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

Project	Project:Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	30/07/2018
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6601	6604	6620
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9580	9579	9577
Wt. of sand in cone (w3) gms.	834	810	820
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3586	3611	3603
Bulk density of sand (ys)gm/cc	1.31	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	2.41	2.41	2.41
Moisture meter reading(moisture content)	12.69	12.62	12.64
Result			
FDD(Wt.of the dry material)=(100yb/100+mc)gm/cc	2.14	2.14	2.14
MDD	2.18	2.18	2.18
OMC	12.70%	12.70%	12.70%
% of Compaction Obtained	98.16	98.33	98.02
Compaction Required	98%	98%	98%

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-26

Project	Project:Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	30/07/2018
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6608	6611	6615
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9579	9580	9582
Wt. of sand in cone (w3) gms.	834	810	836
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3587	3610	3582
Bulk density of sand (γs)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.43	2.42	2.44
Moisture meter reading(moisture content)	12.43	12.45	12.47
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.16	2.15	2.17
MDD	2.19	2.19	2.19
OMC	12.59%	12.59%	12.59%
% of Compaction Obtained	98.76	98.16	98.97
Compaction Required	98%	98%	98%

ಸಹಾಯಕ ಅಭಿಯಂತರರು
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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಪ್ರತಿ ವರಿಷ್ಠ: ಬೆಂಗಳೂರು-೯೬

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Project	Project:Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	31/07/2018
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6579	6581	6545
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9588	9591	9596
Wt. of sand in cone (w3) gms.	835	820	832
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3577	3589	3572
Bulk density of sand (γs)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.43	2.42	2.42
Moisture meter reading(moisture content)	12.33	12.36	12.39
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.16	2.15	2.15
MDD	2.19	2.19	2.19
OMC	12.63%	12.63%	12.63%
% of Compaction Obtained	98.69	98.36	98.27
Compaction Required	98%	98%	98%

ಸಹಾಯಕ ಅಭಿಯಂತರರು
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Authorised Signatory

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬೆಂಗಳೂರು-7

Project	Project:Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	31/07/2018
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6510	6516	6513
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9556	9542	9533
Wt. of sand in cone (w3) gms.	834	832	835
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3655	3626	3632
Bulk density of sand (γs)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.35	2.37	2.37
Moisture meter reading(moisture content)	12.62	12.68	12.69
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.09	2.11	2.10
MDD	2.13	2.13	2.13
OMC	12.69%	12.69%	12.69%
% of Compaction Obtained	98.01	98.83	98.62
Compaction Required	98%	98%	98%

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

Authorised Signatory

ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-26

TEJUS
CONSULTANTS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor:	Sri. M. S. Venkatesh

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	08/08/2018
		Date of Testing	08/08/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	655	89	670	68
16.0	12.5	1287	114	1145	84
12.5	10.0	636	78	580	122
10.0	6.3	645	73	585	75
Total		3223	354	2980	349

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.98
Elongation Index(%):	11.71
Combined FI+EL (%)	22.69

Authorised Signatory

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

GRADATION FOR BC
(As per MORT&H 500-17,Grading-2)

Name of Work	:	**Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.**
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	08/08/2018
Type of Mix	:	BC
Sample I/D	:	BC3

Sample Location:	At plant	Date of Sampling:	08/08/2018
Type of material & Purpose:	BC	Date of testing:	08/08/2018
		Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	89	90.0	7.60	92.40	90 - 100
9.50	118	209.0	17.42	82.58	70 - 88
4.75	216	424.0	35.33	64.67	53 - 71
2.360	178	561.0	46.75	53.25	42 - 58
1.180	149	712.0	59.33	40.67	34 - 48
0.600	127	839.0	69.92	30.08	26 - 38
0.300	124	963.0	80.25	19.75	18 - 28
0.150	86	1048.0	87.33	12.67	12 - 20
0.075	109	1152.0	96.00	4.00	4 - 10
Pan	48.0				
Total	1200.0				

ಸಹಾಯಕ ಅಭಿಯಂತರರು
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Authorised Signatory

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	**Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.**		
Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**		
Consultant	**M/s Tejus Consultants**		
Contractor	**Sri. M. S. Venkatesh**		
Proposed Use	BC	**Date of Sampling**	**08/08/2018**
Sample Location	At plant	**Date of Testing**	**08/08/2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	371.00	356.00	367.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	287.00	281.00	288.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	84.00	75.00	79.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	22.64	21.07	21.53	
5	Average Aggregate impact value	(%)	21.74			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

Authorised Signatory

TEJUS CONSULTANTS

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri. M. S. Venkatesh
Date of Testing :	09/08/2018
Type of Mix :	Tack coat
Sample I/D :	1

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.876	0.875	0.872
Final weight of plate after application of tack Coat (c)	Kg	0.898	0.899	0.895
Weight of tack Coat (d=c-b)	Kg	0.022	0.024	0.023
Rate of spread of tack coat	Kg/sq.m	0.244	0.267	0.256
Average	Kg/sq.m	0.256		
Specified Limit	Kg/sq.m	0.250 Kg/sq.m		

TEJUS CONSULTANTS

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	**Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.**		
Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**		
Consultant	**M/s Tejus Consultants**		
Contractor	**Sri. M. S. Venkatesh**		
Proposed Use	BC	**Date of Sampling**	**09/08/2018**
Sample Location	At plant	**Date of Testing**	**09/08/2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	367.00	355.00	367.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	289.00	284.00	288.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	78.00	71.00	79.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	21.25	20.00	21.53	
5	Average Aggregate impact value	(%)	20.93			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

Authorised Signatory

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ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX	
Name of Work :	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri. M. S. Venkatesh
Date of Testing :	09/08/2018
Type of Mix :	BC
Sample I/D :	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	985	987
2. Weight of Mixture after extraction, g	931	934
3. Weight of Bitumen	54	53
4. Weight of filter paper before extraction, g	4.00	4.00
5. Weight of filter paper after extraction, g	5.00	5.00
6. Weight of fines, g	1.00	1.00
7. Weight of Bitumen & fines	55.00	54.00
8. Bitumen content in %	5.58	5.47
9. Average Bitumen content in %	5.53	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-17,Grading-2)

Sample Location:	At site	Date of Sampling:	09/08/2018
Type of material & Purpose:	BC	Date of testing:	09/08/2018
		Oven Dry Wt.(gms):	931.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	67	67.0	7.20	92.80	90 - 100
9.50	128	195.0	20.95	79.05	70 - 88
4.75	147	342.0	36.73	63.27	53 - 71
2.360	144	486.0	52.20	47.80	42 - 58
1.180	90	576.0	61.87	38.13	34 - 48
0.600	64	640.0	68.74	31.26	26 - 38
0.300	79	719.0	77.23	22.77	18 - 28
0.150	70	789.0	84.75	15.25	12 - 20
0.075	91	880.0	94.52	5.48	4 - 10
Pan	51.0				
Total	931.0				

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ

Authorised Signatory

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಧಿಯಂ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-೨೫

TEJUS
CONSULTANTS

GRADATION FOR BC
(As per MORT&H 500-17,Grading-2)

Name of Work	:	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	09/08/2018
Type of Mix	:	BC
Sample I/D	:	BC3

Sample Location:	At plant	Date of Sampling:	09/08/2018
Type of material & Purpose:	BC	Date of testing:	09/08/2018
		Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	88	90.0	7.60	92.40	90 - 100
9.50	116	209.0	17.42	82.58	70 - 88
4.75	217	424.0	35.33	64.67	53 - 71
2.360	179	561.0	46.75	53.25	42 - 58
1.180	149	712.0	59.33	40.67	34 - 48
0.600	127	839.0	69.92	30.08	26 - 38
0.300	123	962.0	80.17	19.83	18 - 28
0.150	86	1048.0	87.33	12.67	12 - 20
0.075	109	1152.0	96.00	4.00	4 - 10
Pan	48.0				
Total	1200.0				

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

Authorised Signatory

TEJUS CONSULTANTS

ಸಹಾಯಕ ಕಾರ್ಯ[illegible]ಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-74

TEJUS
CONSULTANTS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor:	Sri. M. S. Venkatesh

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	09/08/2018
		Date of Testing	09/08/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	655	87	670	70
16.0	12.5	1287	116	1145	85
12.5	10.0	636	78	580	123
10.0	6.3	645	73	585	75
Total		3223	354	2980	353

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.98
Elongation Index(%):	11.85
Combined FI+EL (%)	22.83

Authorised Signatory

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-24

AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Sri. M. S. Venkatesh		
Proposed Use	BC	Date of Sampling	10/08/2018
Sample Location	At plant	Date of Testing	10/08/2018

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	368.00	355.00	367.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	289.00	280.00	288.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	79.00	75.00	79.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	21.47	21.13	21.53	
5	Average Aggregate impact value	(%)	21.37			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

Authorised Signatory

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor:	Sri. M. S. Venkatesh

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	10/08/2018
		Date of Testing	10/08/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	655	88	670	69
16.0	12.5	1287	115	1145	86
12.5	10.0	636	79	580	123
10.0	6.3	645	73	585	75
Total		3223	355	2980	353

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.01
Elongation Index(%):	11.85
Combined FI+EL (%)	22.86

Authorised Signatory

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ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-28

TEJUS
CONSULTANTS

GRADATION FOR BC
(As per MORT&H 500-17,Grading-2)

Name of Work	:	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	10/08/2018
Type of Mix	:	BC
Sample I/D	:	BC3

Sample Location:	At plant	Date of Sampling:	10/08/2018
Type of material & Purpose:	BC	Date of testing:	10/08/2018
		Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	87	90.0	7.60	92.40	90 - 100
9.50	116	209.0	17.42	82.58	70 - 88
4.75	215	424.0	35.33	64.67	53 - 71
2.360	177	561.0	46.75	53.25	42 - 58
1.180	149	712.0	59.33	40.67	34 - 48
0.600	127	839.0	69.92	30.08	26 - 38
0.300	124	963.0	80.25	19.75	18 - 28
0.150	89	1048.0	87.33	12.67	12 - 20
0.075	109	1152.0	96.00	4.00	4 - 10
Pan	48.0				
Total	1200.0				

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

Authorised Signatory

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು

TEJUS
CONSULTANTS

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX	
Name of Work :	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri. M. S. Venkatesh
Date of Testing :	10/08/2018
Type of Mix :	BC
Sample I/D :	BC1

DETERMINATION OF BITUMEN CONTENT		
Description	**Trail 1**	**Trail 2**
1. Weight of Mixture before extraction, g	985	987
2. Weight of Mixture after extraction, g	930	934
3. Weight of Bitumen	55	53
4. Weight of filter paper before extraction, g	4.00	4.00
5. Weight of filter paper after extraction, g	4.70	5.00
6. Weight of fines, g	0.70	1.00
7. Weight of Bitumen & fines	55.70	54.00
8. Bitumen content in %	5.65	5.47
9. Average Bitumen content in %	5.56	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-17,Grading-2)

Sample Location:	At site	Date of Sampling:	10/08/2018
Type of material & Purpose:	BC	Date of testing:	10/08/2018
		Oven Dry Wt.(gms):	930.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	68	68.0	7.31	92.69	90 - 100
9.50	126	194.0	20.86	79.14	70 - 88
4.75	148	342.0	36.77	63.23	53 - 71
2.360	144	486.0	52.26	47.74	42 - 58
1.180	94	580.0	62.37	37.63	34 - 48
0.600	65	645.0	69.35	30.65	26 - 38
0.300	80	725.0	77.96	22.04	18 - 28
0.150	71	796.0	85.59	14.41	12 - 20
0.075	90	886.0	95.27	4.73	4 - 10
Pan	44.0				
Total	930.0				

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

Authorised Signatory

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-26

TEJUS
CONSULTANTS

DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri. M. S. Venkatesh
Date of Testing :	10/08/2018
Type of Mix :	Tack coat
Sample I/D :	1

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.876	0.874	0.880
Final weight of plate after application of tack Coat (c)	Kg	0.899	0.897	0.903
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256	0.256
Average	Kg/sq.m	0.256		
Specified Limit	Kg/sq.m	0.250 Kg/sq.m		

Authorised Signatory

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ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX	
Name of Work :	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri. M. S. Venkatesh
Date of Testing :	13/8/2018
Type of Mix :	BC
Sample I/D :	BC1

DETERMINATION OF BITUMEN CONTENT		
Description	**Trail 1**	**Trail 2**
1. Weight of Mixture before extraction, g	985	987
2. Weight of Mixture after extraction, g	932	933
3. Weight of Bitumen	53	54
4. Weight of filter paper before extraction, g	4.00	4.00
5. Weight of filter paper after extraction, g	5.00	5.00
6. Weight of fines, g	1.00	1.00
7. Weight of Bitumen & fines	54.00	55.00
8. Bitumen content in %	5.48	5.57
9. Average Bitumen content in %	5.53	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION (As per MORT&H 500-17,Grading-2)			
Sample Location:	At site	Date of Sampling:	13/8/2018
Type of material & Purpose:	BC	Date of testing:	13/8/2018
		Oven Dry Wt.(gms):	932.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	68	68.0	7.30	92.70	90 - 100
9.50	126	194.0	20.82	79.18	70 - 88
4.75	148	342.0	36.70	63.30	53 - 71
2.360	142	484.0	51.93	48.07	42 - 58
1.180	92	576.0	61.80	38.20	34 - 48
0.600	65	641.0	68.78	31.22	26 - 38
0.300	80	721.0	77.36	22.64	18 - 28
0.150	73	794.0	85.19	14.81	12 - 20
0.075	96	890.0	95.49	4.51	4 - 10
Pan	42.0				
Total	932.0				

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TEJUS
CONSULTANTS

DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to Roads, and Drains at Shabarinagara, Prashanthanagara, Kaverinagara and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri. M. S. Venkatesh
Date of Testing :	13/8/2018
Type of Mix :	Tack coat
Sample I/D :	1

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.876	0.876	0.876
Final weight of plate after application of tack Coat (c)	Kg	0.899	0.899	0.899
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256	0.256
Average	Kg/sq.m	0.256		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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BRUHAT BANGALORE MAHANAGARA PALIKE

Name of the Work : 17.Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

BYATARAYANAPURA DIVISION

TEST REPORT

1st & Part bill

CIVIL EXPERTS
ISO 9001:2015
CONSULTANTS & TESTING CENTER

Highway / Building Material Testing | Structural Strengthening Solutions
Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

NABL ACCREDITED AS PER ISO/IEC 17025:2005

Job No.: CECTC/MSV/QC/2018-19

Date: 05.06.2018

TEST RESULTS OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Client : **Bruhat Bangalore Mahanagar Palike**
Agency : **Sri.M.S. Venkatesh, Contractor, Bangalore.**
Name of Work : 17.Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Sample Identification : 8mm TMT Bars
Technical Reference : IS 1786:2008, IS 1608:2005, IS 1599:1985 (Reaffirmed 2006)
Date of test: : 05.06.2018

Sl.No	Nominal size (dia in mm)	Mass per metre (kg/metre)	TENSILE STRENGTH		
			0.20 % proof stress/ yield stress ($N/mm^{2)}$	Tensile strength ($N/mm^{2)}$	Elongation, percent on gauge length
1	8	0.398	512	552	17

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported within 15 days from the date of testing.

For Civil Experts

Authorised Signature

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ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Kananakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.i

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri. M. S. Venkatesh
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	Plant			Date of Sampling	18/06/2018
				Date of Testing	18/06/2018
IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	92	92	3.07	96.93	95-100
20.00mm	1320	1412	47.07	52.93	30-70
10.00mm	1200	2612	87.07	12.93	10-35
4.75mm	320	2932	97.73	2.27	0-5
Pan	68	3000	100.00	0.00	

Remarks : ✓ Satisfactory / Not Satisfactory

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Consultant's Representative

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TEJUS
CONSULTANTS

Test Report on Cement

Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri. M. S. Venkatesh
Sample ID	Cement
Date of Sample Tested	18/06/2018
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	38 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	360 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	6mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.00%	

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TEJUS
CONSULTANTS

TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri. M. S. Venkatesh

SPECIFIC GRAVITY AND WATER ABSORPTION
FINE AGGREGATE (IS-2386-PART-3)

Type of Material	sand/M sand		Proposed Use		Drain
Location/Source	At site/Plant		Date of Sampling		18/06/2018
Period of Soaking	24 hours		Date of Testing		18/06/2018

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	650	648	652	
B	Weight of oven - dry sample gm.	642	640	644	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1686	1682	1684	
E	Bulk specific gravity B / (C + A - D)	2.686	2.656	2.650	2.664
G	Absorption (%) (A - B) *100 / B	1.246	1.250	1.242	1.246

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TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	Tejus Consultants, Bangalore
Contractor	Sri. M. S. Venkatesh

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate		Proposed Use	Drain	
Sample Location	At site/Plant		Date of Sampling	18/06/2018	
			Date of Testing	18/06/2018	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	215	215	7.17	92.83	90 - 100
2.36 mm	335	550	18.33	81.67	75 - 100
1.18 mm	558	1108	36.93	63.07	55 - 90
0.600 mm	547	1655	55.17	44.83	35 -59
0.300 mm	564	2219	73.97	26.03	8-30
0.150 mm	678	2897	96.57	3.43	0 - 10
Pan	103	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

Consultant's Representative

TEJUS CONSULTANTS

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TEJUS
CONSULTANTS

Test report on Compressive strength of concrete cubes

Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri. M. S. Venkatesh
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	26/06/2018	03/07/18	7 days	8.235	22500	298	13.24	13.17
2	26/06/2018	03/07/18	7 days	8.325	22500	296	13.16	
3	26/06/2018	03/07/18	7 days	8.324	22500	295	13.11	

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TEJUS
CONSULTANTS

Test report on Compressive strength of concrete cubes

Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri. M. S. Venkatesh
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	26/06/2018	24/07/2018	28 days	8.325	22500	450	20.00	20.12
2	26/06/2018	24/07/2018	28 days	8.340	22500	455	20.22	
3	26/06/2018	24/07/2018	28 days	8.330	22500	453	20.13	

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Test report on Compressive strength of concrete cubes

Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri. M. S. Venkatesh
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	26/06/2018	03/07/18	7 days	8.210	22500	305	13.56	13.45
2	26/06/2018	03/07/18	7 days	8.224	22500	302	13.42	
3	26/06/2018	03/07/18	7 days	8.232	22500	301	13.38	

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Test report on Compressive strength of concrete cubes

Project	.Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri. M. S. Venkatesh
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	26/06/2018	24/07/2018	28 days	8.330	22500	460	20.44	20.19
2	26/06/2018	24/07/2018	28 days	8.320	22500	452	20.09	
3	26/06/2018	24/07/2018	28 days	8.345	22500	451	20.04	

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TEJUS
CONSULTANTS

Test Report on Cement

Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri. M. S. Venkatesh
Sample ID	Cement
Date of Sample Tested	26/06/2018
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	40 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	370 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	5mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.00%	

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Test Report on Cement

Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri. M. S. Venkatesh
Sample ID	Cement
Date of Sample Tested	26/06/2018
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	39 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	374 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	5mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.	
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	Sri. M. S. Venkatesh	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	20 mm down size	Proposed Use	Drain
Sample Location	Plant	Date of Sampling	26/06/2018
		Date of Testing	26/06/2018

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
40.00 mm	0	0	0	100	100
20.00 mm	360	360	3.60	96.40	95 - 100
10.00 mm	4825	5185	51.85	48.15	25 - 55
4.75 mm	4125	9310	93.10	6.90	0 - 10
Pan	690	10000			

Remarks : Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	Sri. M. S. Venkatesh				
Total Weight:	9500	gms			

SIEVE ANALYSIS

Type of Material	20 mm down size		Proposed Use	Drain	
Sample Location	Plant/ At site		Date of Sampling	26/06/2018	
			Date of Testing	26/06/2018	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
40.00 mm	0	0	0	100	100
20.00 mm	252	252	2.65	97.35	95 - 100
10.00 mm	5323	5575	58.68	41.32	25 - 55
4.75 mm	3402	8977	94.49	5.51	0 - 10
Pan	523	9500			

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.	
Consultants	TEJUS CONSULTANTS	
Contractor	Sri. M. S. Venkatesh	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	12.5 mm down size	Proposed Use	Drain
Sample Location	Plant	Date of Sampling	26/06/2018
		Date of Testing	26/06/2018

IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	576	576	5.76	94.24	90-100
10.0	3523	4099	40.99	59.01	40-85
4.75	5786	9885	98.85	1.15	0-10
Pan	115	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.	
Consultants	TEJUS CONSULTANTS	
Contractor	Sri. M. S. Venkatesh	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	12.5 mm down size	Proposed Use	Drain
Sample Location	Plant	Date of Sampling	26/06/2018
		Date of Testing	26/06/2018

IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	610	610	6.10	93.90	90-100
10.0	2957	3567	35.67	64.33	40-85
4.75	5960	9527	95.27	4.73	0-10
Pan	473	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri. M. S. Venkatesh

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	sand/M sand	Proposed Use	Drain
Location/Source	At site/Plant	Date of Sampling	26/06/2018
Period of Soaking	24 hours	Date of Testing	26/06/2018

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	650	648	652	
B	Weight of oven - dry sample gm.	642	640	644	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1686	1682	1684	
E	Bulk specific gravity B / (C + A - D)	2.686	2.656	2.650	2.664
G	Absorption (%) (A - B) *100 / B	1.246	1.250	1.242	1.246

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	Tejus Consultants, Bangalore
Contractor	Sri. M. S. Venkatesh

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate		Proposed Use	Drain	
Sample Location	At site/Plant		Date of Sampling	26/06/2018	
			Date of Testing	26/06/2018	

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	215	215	7.17	92.83	90 - 100
2.36 mm	335	550	18.33	81.67	75 - 100
1.18 mm	558	1108	36.93	63.07	55 - 90
0.600 mm	547	1655	55.17	44.83	35 -59
0.300 mm	564	2219	73.97	26.03	8-30
0.150 mm	678	2897	96.57	3.43	0 - 10
Pan	103	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri. M. S. Venkatesh

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	sand/M sand	Proposed Use	Drain
Location/Source	At site/Plant	Date of Sampling	26/06/2018
Period of Soaking	24 hours	Date of Testing	26/06/2018

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	645	665	664	
B	Weight of oven - dry sample gm.	638	658	656	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1681	1692	1692	
E	Bulk specific gravity B / (C + A - D)	2.669	2.653	2.656	2.660
G	Absorption (%) (A - B) *100 / B	1.097	1.064	1.220	1.127

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	Tejus Consultants, Bangalore
Contractor	Sri. M. S. Venkatesh

SIEVE ANALYSIS

Total Weight:	3000	gms			
Type of Material	Sand/M sand		Proposed Use	Drain	
Sample Location	At site/Plant		Date of Sampling	26/06/2018	
			Date of Testing	26/06/2018	

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	223	223	7.43	92.57	90 - 100
2.36 mm	326	549	18.30	81.70	75 - 100
1.18 mm	569	1118	37.27	62.73	55 - 90
0.600 mm	541	1659	55.30	44.70	35 -59
0.300 mm	582	2241	74.70	25.30	8-30
0.150 mm	680	2921	97.37	2.63	0 - 10
Pan	79	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

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Project	Project:Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Sri. M. S. Venkatesh		
Proposed Use	WMM	**Date of Sampling**	**24/07/2018**
Sample Location	**At plant**	**Date of Testing**	**24/07/2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	386.00	376.00	373.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	299.00	277.00	296.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	87.00	99.00	77.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	22.54	26.33	20.64	
5	Average Aggregate impact value	(%)	23.17			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Project:Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Type of Material	WMM	Proposed Use	WMM
Sample Location	At plant	Date of Sampling	24/07/2018
		Date of Testing	24/07/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	908	76	871	98
16.0	12.5	1197	118	1131	96
12.5	10.0	557	88	453	72
10.0	6.3	583	89	532	64
Total		3245	371	2987	330

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.43
Elongation Index(%):	11.05
Combined FI+EL (%)	22.48

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GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Project;Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	24/07/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	**Date of Sampling:**	24/07/2018
Type of material & Purpose:	WMM	**Date of testing:**	24/07/2018
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	359	334	3.34	96.66	95-100
22.4	2396	2729	27.29	72.71	60-80
11.2	1774	4527	45.27	54.73	40-60
4.75	1685	6260	62.60	37.40	25-40
2.36	1164	7325	73.25	26.75	15-30
0.6	1294	8626	86.26	13.74	8.0-22.0
0.075	954	9653	96.53	3.47	0-8
Pan	347				
Total	10000				

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri. M. S. Venkatesh
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	Plant			Date of Sampling	27/07/2018
				Date of Testing	27/07/2018
IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	98	98	3.27	96.73	95-100
20.00mm	1290	1388	46.27	53.73	30-70
10.00mm	1255	2643	88.10	11.90	10-35
4.75mm	315	2958	98.60	1.40	0-5
Pan	42	3000	100.00	0.00	

Remarks : ✓ Satisfactory / Not Satisfactory

Consultant's Representative

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ದ್ಯಾವರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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Test Report on Cement

Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri. M. S. Venkatesh
Sample ID	Cement
Date of Sample Tested	27/07/2018
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	38 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	355 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	4mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri. M. S. Venkatesh

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	sand/M sand	Proposed Use	Drain
Location/Source	At site/Plant	Date of Sampling	27/07/2018
Period of Soaking	24 hours	Date of Testing	27/07/2018

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	645	665	664	
B	Weight of oven - dry sample gm.	638	658	656	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1681	1692	1692	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.669	2.653	2.656	2.660
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.097	1.064	1.220	1.127

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	Tejus Consultants, Bangalore
Contractor	Sri. M. S. Venkatesh

SIEVE ANALYSIS

Total Weight:	3000	gms			
Type of Material	Sand/M sand		Proposed Use	Drain	
Sample Location	At site/Plant		Date of Sampling	27/07/2018	
			Date of Testing	27/07/2018	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-III)
10.00 mm	0	0	0	100.00	100
4.75 mm	223	223	7.43	92.57	90 - 100
2.36 mm	327	550	18.33	81.67	75 - 100
1.18 mm	570	1120	37.33	62.67	55 - 90
0.600 mm	541	1661	55.37	44.63	35 -59
0.300 mm	581	2242	74.73	25.27	8-30
0.150 mm	659	2901	96.70	3.30	0 - 10
Pan	99	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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Project	Project;ovements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	27/07/2018
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	**1**	**2**	**3**
Wt. of wet material from hole (Ww) gms.	6530	6545	6575
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9534	9506	9480
Wt. of sand in cone (w3) gms.	834	832	835
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3655	3662	3685
Bulk density of sand (γs)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.36	2.36	2.36
Moisture meter reading(moisture content)	12.62	12.68	12.69
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.09	2.09	2.09
MDD	2.13	2.13	2.13
OMC	12.69%	12.69%	12.69%
% of Compaction Obtained	98.31	98.30	98.12
Compaction Required	98%	98%	98%

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PRECAST SLAB (CORE) TEST REPORT		
Client	:	Bruhat Bangalore Mahanagara Palike
Contractor	:	Sri. M. S. Venkatesh
Consultant	:	TEJUS CONSULTANTS
Name of Work	:	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
No.of Sample Tested	:	3
Date of Testing	:	28/07/2018
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20}. 100mm thick

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	80.00	0.385	2450.99	1.60	0.960	37.80	19.25	20.79	19.96	24.95
2	50.00	80.00	0.386	2457.35	1.60	0.960	37.60	19.15	20.68	19.85	24.82
3	50.00	80.00	0.380	2419.16	1.60	0.960	38.10	19.40	20.96	20.12	25.15

Note:

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PRECAST SLAB (CORE) TEST REPORT		
Client	:	Bruhat Bangalore Mahanagara Palike
Contractor	:	Sri. M. S. Venkatesh
Consultant	:	TEJUS CONSULTANTS
Name of Work	:	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
No.of Sample Tested	:	3
Date of Testing	:	28/07/2018
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20} - 100mm thick

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	80.00	0.385	2450.99	1.60	0.960	38.20	19.46	21.01	20.17	25.21
2	50.00	80.00	0.388	2470.08	1.60	0.960	38.25	19.48	21.04	20.20	25.25
3	50.00	80.00	0.386	2457.35	1.60	0.960	38.60	19.66	21.23	20.38	25.48

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PRECAST SLAB (CORE) TEST REPORT

Client	:	Bruhat Bangalore Mahanagara Palike
Contractor	:	Sri. M. S. Venkatesh
Name of Work	:	Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
No.of Sample Tested	:	3
Date of Testing	:	28/07/2018
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20} .250mm Thick

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	100.00	180.00	3.455	2443.91	1.80	0.960	160.00	20.37	22.00	21.12	26.40
2	100.00	180.00	3.485	2465.13	1.80	0.960	159.60	20.32	21.95	21.07	26.34
3	100.00	180.00	3.500	2475.74	1.80	0.960	159.80	20.35	21.97	21.10	26.37

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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

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Project	**Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.**		
Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**		
Consultant	**M/s Tejus Consultants**		
Contractor	**Sri. M. S. Venkatesh**		
Proposed Use	BC	**Date of Sampling**	**06/08/2018**
Sample Location	At plant	**Date of Testing**	**06/08/2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	367.00	354.00	362.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	288.00	279.00	287.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	79.00	75.00	75.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	21.53	21.19	20.72	
5	Average Aggregate impact value	(%)	21.14			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	**Project: Improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.**
Client :	**BRUHAT BANGALORE MAHANAGARA PALIKE**
Consultant :	**M/s Tejus Consultants**
Contractor:	**Sri. M. S. Venkatesh**

Type of Material	BC	**Proposed Use**	**BC**
Sample Location	At plant	**Date of Sampling**	**06/08/2018**
		Date of Testing	**06/08/2018**

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	654	89	670	68
16.0	12.5	1288	114	1145	85
12.5	10.0	635	80	580	122
10.0	6.3	644	72	585	74
Total		**3221**	**355**	**2980**	**349**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.02
Elongation Index(%):	11.71
Combined FI+EL (%)	22.73

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GRADATION FOR BC
(As per MORT&H 500-17,Grading-2)

Name of Work	:	**Project;improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.**
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	06/08/2018
Type of Mix	:	BC
Sample I/D	:	BC3

Sample Location:	At plant	Date of Sampling:	06/08/2018
Type of material & Purpose:	BC	Date of testing:	06/08/2018
		Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	88	90.0	7.60	92.40	90 - 100
9.50	117	209.0	17.42	82.58	70 - 88
4.75	215	424.0	35.33	64.67	53 - 71
2.360	176	561.0	46.75	53.25	42 - 58
1.180	148	712.0	59.33	40.67	34 - 48
0.600	126	838.0	69.83	30.17	26 - 38
0.300	122	960.0	80.00	20.00	18 - 28
0.150	85	1048.0	87.33	12.67	12 - 20
0.075	108	1152.0	96.00	4.00	4 - 10
Pan	48.0				
Total	1200.0				

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX	
Name of Work :	Project: improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri. M. S. Venkatesh
Date of Testing :	09/08/2018
Type of Mix :	BC
Sample I/D :	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	984	986
2. Weight of Mixture after extraction, g	930	933
3. Weight of Bitumen	54	53
4. Weight of filter paper before extraction, g	4.00	4.00
5. Weight of filter paper after extraction, g	5.00	5.00
6. Weight of fines, g	1.00	1.00
7. Weight of Bitumen & fines	55.00	54.00
8. Bitumen content in %	5.59	5.48
9. Average Bitumen content in %	5.53	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-17,Grading-2)

Sample Location:	At site	Date of Sampling:	09/08/2018
Type of material & Purpose:	BC	Date of testing:	09/08/2018
		Oven Dry Wt.(gms):	930.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	68	68.0	7.31	92.69	90 - 100
9.50	126	194.0	20.86	79.14	70 - 88
4.75	148	342.0	36.77	63.23	53 - 71
2.360	142	484.0	52.04	47.96	42 - 58
1.180	92	576.0	61.94	38.06	34 - 48
0.600	63	639.0	68.71	31.29	26 - 38
0.300	79	718.0	77.20	22.80	18 - 28
0.150	70	788.0	84.73	15.27	12 - 20
0.075	87	875.0	94.09	5.91	4 - 10
Pan	55.0				
Total	930.0				

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DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Project: improvements to Roads, and Drains at Saraipalya and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri. M. S. Venkatesh
Date of Testing :	09/08/2018
Type of Mix :	Tack coat
Sample I/D :	1

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.872	0.873	0.871
Final weight of plate after application of tack Coat (c)	Kg	0.895	0.896	0.894
Weight of tack Coat (d=c-b)	Kg	0.023	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256	0.256
Average	Kg/sq.m	0.256		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-24

BRUHAT BANGALORE MAHANAGARA PALIKE

Name of the Work : 18.Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

BYATARAYANAPURA DIVISION

TEST REPORT

1st & Part bill

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GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	26/07/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	**Date of Sampling:**	26/07/2018
Type of material & Purpose:	WMM	**Date of testing:**	26/07/2018
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	359	332	3.32	96.68	95-100
22.4	2396	2729	27.29	72.71	60-80
11.2	1774	4527	45.27	54.73	40-60
4.75	1685	6260	62.60	37.40	25-40
2.36	1164	7325	73.25	26.75	15-30
0.6	1294	8626	86.26	13.74	8.0-22.0
0.075	954	9653	96.53	3.47	0-8
Pan	347				
Total	10000				

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GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	26/07/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	**Date of Sampling:**	26/07/2018
Type of material & Purpose:	WMM	**Date of testing:**	26/07/2018
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	337	337	3.37	96.63	95-100
22.4	2217	2554	25.54	74.46	60-80
11.2	1738	4292	42.92	57.08	40-60
4.75	1897	6189	61.89	38.11	25-40
2.36	1365	7554	75.54	24.46	15-30
0.6	1214	8768	87.68	12.32	8.0-22.0
0.075	921	9689	96.89	3.11	0-8
Pan	311				
Total	10000				

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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Type of Material	WMM	**Proposed Use**	WMM
Sample Location	At plant	**Date of Sampling**	26/07/2018
		Date of Testing	26/07/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	905	83	899	83
16.0	12.5	1029	99	1011	117
12.5	10.0	483	87	411	60
10.0	6.3	534	77	465	37
Total		2951	346	2786	297

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.72
Elongation Index(%):	10.66
Combined FI+EL (%)	22.39

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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

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Project	Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Sri. M. S. Venkatesh		
Proposed Use	WMM	**Date of Sampling**	**27/07/2018**
Sample Location	**At plant**	**Date of Testing**	**27/07/2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	383.00	375.00	372.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	298.00	275.00	295.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	85.00	100.00	77.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	22.19	26.67	20.70	
5	Average Aggregate impact value	(%)	23.19			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Type of Material	WMM	**Proposed Use**	WMM
Sample Location	At plant	**Date of Sampling**	27/07/2018
		Date of Testing	27/07/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	907	75	870	97
16.0	12.5	1196	117	1129	99
12.5	10.0	556	87	452	71
10.0	6.3	582	88	530	63
Total		3241	367	2981	330

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.32
Elongation Index(%):	11.07
Combined FI+EL (%)	22.39

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GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	27/07/2018
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	**Date of Sampling:**	27/07/2018
Type of material & Purpose:	WMM	**Date of testing:**	27/07/2018
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	338	338	3.38	96.62	95-100
22.4	2218	2556	25.56	74.44	60-80
11.2	1737	4293	42.93	57.07	40-60
4.75	1897	6190	61.90	38.10	25-40
2.36	1365	7555	75.55	24.45	15-30
0.6	1216	8771	87.71	12.29	8.0-22.0
0.075	926	9697	96.97	3.03	0-8
Pan	303				
Total	10000				

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ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

TEJUS CONSULTANTS
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Project	Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	27/07/2018
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	1	2	3
Wt. of wet material from hole (Ww) gms.	6410	6480	6495
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9693	9663	9648
Wt. of sand in cone (w3) gms.	834	810	820
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3473	3527	3532
Bulk density of sand (γs)gm/cc	1.31	1.32	1.31
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.42	2.43	2.41
Moisture meter reading(moisture content)	12.69	12.62	12.64
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.15	2.15	2.14
MDD	2.18	2.18	2.18
OMC	12.70%	12.70%	12.70%
% of Compaction Obtained	98.42	98.78	98.10
Compaction Required	98%	98%	98%

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Project	Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	**Sri. M. S. Venkatesh**

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	**27/07/2018**
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	**1**	**2**	**3**
Wt. of wet material from hole (Ww) gms.	6568	6578	6546
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9583	9611	9591
Wt. of sand in cone (w3) gms.	834	810	836
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3583	3579	3573
Bulk density of sand (γs)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.42	2.43	2.42
Moisture meter reading(moisture content)	12.43	12.45	12.47
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.15	2.16	2.15
MDD	2.19	2.19	2.19
OMC	12.59%	12.59%	12.59%
% of Compaction Obtained	98.27	98.52	98.18
Compaction Required	98%	98%	98%

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Project	Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	**Sri. M. S. Venkatesh**

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	28/07/2018
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	**1**	**2**	**3**
Wt. of wet material from hole (Ww) gms.	6639	6649	6657
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9544	9546	9549
Wt. of sand in cone (w3) gms.	835	820	832
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3621	3634	3619
Bulk density of sand (ys)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	2.42	2.42	2.43
Moisture meter reading(moisture content)	12.33	12.36	12.39
Result			
FDD(Wt.of the dry material)=(100yb/100+mc)gm/cc	2.15	2.15	2.16
MDD	2.19	2.19	2.19
OMC	12.63%	12.63%	12.63%
% of Compaction Obtained	98.38	98.15	98.65
Compaction Required	98%	98%	98%

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Project	Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. M. S. Venkatesh

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	28/07/2018
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	**1**	**2**	**3**
Wt. of wet material from hole (Ww) gms.	6661	6673	6683
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9437	9437	9434
Wt. of sand in cone (w3) gms.	834	832	835
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3729	3731	3731
Bulk density of sand (γs)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.36	2.36	2.36
Moisture meter reading(moisture content)	12.62	12.68	12.69
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.09	2.10	2.10
MDD	2.13	2.13	2.13
OMC	12.69%	12.69%	12.69%
% of Compaction Obtained	98.29	98.37	98.50
Compaction Required	98%	98%	98%

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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	**Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.**		
Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**		
Consultant	**M/s Tejus Consultants**		
Contractor	**Sri. M. S. Venkatesh**		
Proposed Use	BC	**Date of Sampling**	**09/08/2018**
Sample Location	At plant	**Date of Testing**	**09/08/2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	368.00	355.00	367.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	289.00	280.00	288.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	79.00	75.00	79.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	21.47	21.13	21.53	
5	Average Aggregate impact value	(%)	21.37			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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ಸಹಾಯಕ ಅಭಿಯಂತರರು

ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	Project:Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor:	Sri. M. S. Venkatesh

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	09/08/2018
		Date of Testing	09/08/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	655	88	670	69
16.0	12.5	1287	115	1145	86
12.5	10.0	636	79	580	123
10.0	6.3	645	73	585	75
Total		3223	355	2980	353

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.01
Elongation Index(%):	11.85
Combined FI+EL (%)	22.86

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ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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GRADATION FOR BC
(As per MORT&H 500-17,Grading-2)

Name of Work	:	**Project;Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.**
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. M. S. Venkatesh
Date of Testing	:	09/08/2018
Type of Mix	:	BC
Sample I/D	:	BC3

Sample Location:	At plant	Date of Sampling:	09/08/2018
Type of material & Purpose:	BC	Date of testing:	09/08/2018
		Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	89	90.0	7.60	92.40	90 - 100
9.50	118	209.0	17.42	82.58	70 - 88
4.75	216	424.0	35.33	64.67	53 - 71
2.360	178	561.0	46.75	53.25	42 - 58
1.180	149	712.0	59.33	40.67	34 - 48
0.600	127	839.0	69.92	30.08	26 - 38
0.300	124	963.0	80.25	19.75	18 - 28
0.150	86	1048.0	87.33	12.67	12 - 20
0.075	109	1152.0	96.00	4.00	4 - 10
Pan	48.0				
Total	1200.0				

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work :	Project: Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri. M. S. Venkatesh
Date of Testing :	10/08/2018
Type of Mix :	BC
Sample I/D :	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	985	987
2. Weight of Mixture after extraction, g	933	935
3. Weight of Bitumen	52	52
4. Weight of filter paper before extraction, g	4.00	4.00
5. Weight of filter paper after extraction, g	5.60	5.60
6. Weight of fines, g	1.60	1.60
7. Weight of Bitumen & fines	53.60	53.60
8. Bitumen content in %	5.44	5.43
9. Average Bitumen content in %	5.44	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-17,Grading-2)

Sample Location:	At site	Date of Sampling:	10/08/2018
Type of material & Purpose:	BC	Date of testing:	10/08/2018
		Oven Dry Wt.(gms):	933.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	68	68.0	7.29	92.71	90 - 100
9.50	126	194.0	20.79	79.21	70 - 88
4.75	148	342.0	36.66	63.34	53 - 71
2.360	142	484.0	51.88	48.12	42 - 58
1.180	92	576.0	61.74	38.26	34 - 48
0.600	63	639.0	68.49	31.51	26 - 38
0.300	79	718.0	76.96	23.04	18 - 28
0.150	70	788.0	84.46	15.54	12 - 20
0.075	98	886.0	94.96	5.04	4 - 10
Pan	47.0				
Total	933.0				

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DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Project:Improvements to Roads, and Drains at Amarjyothi Layout, Ashwathnagar, Afzal Layout, Tuba Layout, Sadiq layout and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri. M. S. Venkatesh
Date of Testing :	10/08/2018
Type of Mix :	Tack coat
Sample I/D :	1

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.876	0.875	0.872
Final weight of plate after application of tack Coat (c)	Kg	0.898	0.899	0.895
Weight of tack Coat (d=c-b)	Kg	0.022	0.024	0.023
Rate of spread of tack coat	Kg/sq.m	0.244	0.267	0.256
Average	Kg/sq.m	0.256		
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**		

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BRUHAT BANGALORE MAHANAGARA PALIKE

Name of the Work : 19.Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.

BYATARAYANAPURA DIVISION

TEST REPORT

1st & Part bill

TEJUS
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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Divisi
Consultants	TEJUS CONSULTANTS, Basaveshwar Nagar Bangalore
Contractor	Sri M.S Venkatesh
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	Plant			Date of Sampling	11/07/2018
				Date of Testing	11/07/2018
IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	95	95	3.17	96.83	95-100
20.00mm	1322	1417	47.23	52.77	30-70
10.00mm	1210	2627	87.57	12.43	10-35
4.75mm	325	2952	98.40	1.60	0-5
Pan	48	3000	100.00	0.00	

Remarks : ✓ Satisfactory / Not Satisfactory

Consultant's Representative

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2018

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TEJUS
CONSULTANTS

Test Report on Cement

Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri. M.S Venkatesh
Sample ID	Cement
Date of Sample Tested	11/07/18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	38 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	360 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	6mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.00%	

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri. M.S Venkatesh

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	sand/M sand		Proposed Use		Drain
Location/Source	At site/Plant		Date of Sampling		11/07/2018
Period of Soaking	24 hours		Date of Testing		11/07/2018

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	648	647	651	
B	Weight of oven - dry sample gm.	642	640	644	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1686	1682	1684	
E	Bulk specific gravity B / (C + A - D)	2.709	2.667	2.661	2.679
G	Absorption (%) (A - B) *100 / B	0.935	1.094	1.087	1.038

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	Tejus Consultants, Bangalore
Contractor	Sri. M.S Venkatesh

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate		Proposed Use	Drain	
Sample Location	At site/Plant		Date of Sampling	11/07/2018	
			Date of Testing	11/07/2018	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-I$_1$)
10.00 mm	0	0	0	100.00	100
4.75 mm	222	222	7.40	92.60	90 - 100
2.36 mm	333	555	18.50	81.50	75 - 100
1.18 mm	555	1110	37.00	63.00	55 - 90
0.600 mm	550	1660	55.33	44.67	35 -59
0.300 mm	564	2224	74.13	25.87	8-30
0.150 mm	678	2902	96.73	3.27	0 - 10
Pan	98	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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Consultant's Representative

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TEJUS
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GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri.M.S Venkatesh
Date of Testing	:	13/07/18
Type of Mix	:	WMM
Sample I/D	:	WMM 1

Sample Location:	At plant	**Date of Sampling:**	13/07/18
Type of material & Purpose:	WMM	**Date of testing:**	13/07/18
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	360	360	3.60	96.40	95-100
22.4	2310	2670	26.70	73.30	60-80
11.2	1850	4520	45.20	54.80	40-60
4.75	1900	6420	64.20	35.80	25-40
2.36	1350	7770	77.70	22.30	15-30
0.6	1210	8980	89.80	10.20	8.0-22.0
0.075	860	9840	98.40	1.60	0-8
Pan	160				
Total	10000				

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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Sri.M.S.Venkatesh		
Proposed Use	WMM	**Date of Sampling**	13/07/18
Sample Location	At plant	**Date of Testing**	13/07/18

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	388.00	378.00	381.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	298.00	288.00	292.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	90.00	90.00	89.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	23.20	23.81	23.36	
5	Average Aggregate impact value	(%)	23.45			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

Authorised Signatory

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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri.M.S Venkatesh

Type of Material	WMM	Proposed Use	WMM
Sample Location	At plant	Date of Sampling	13/07/18
		Date of Testing	13/07/18

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	912	85	910	85
16.0	12.5	1303	92	1121	121
12.5	10.0	485	87	429	65
10.0	6.3	560	76	451	45
Total		3260	340	2911	316

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.43
Elongation Index(%):	10.86
Combined FI+EL (%)	21.28

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Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri.M.S Venkatesh

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	**16/07/18**
Layer no. or level	WMM I layer
Depth of hole	250mm

Field density:	**1**	**2**	**3**
Wt. of wet material from hole (Ww) gms.	6552	6241	6540
Wt. of sand+cylinder before pouring (w1) gms.	14000	14000	14000
Wt. of sand+cylinder after pouring (w2) gms.	9591	9781	9606
Wt. of sand in cone (w3) gms.	832	810	836
Wt. of sand in hole (w4)=(w1-w2-w3) gms.	3577	3409	3558
Bulk density of sand (γs)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.42	2.42	2.43
Moisture meter reading(moisture content)	12.43	12.45	12.47
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.15	2.15	2.16
MDD	2.19	2.19	2.19
OMC	12.59%	12.59%	12.59%
% of Compaction Obtained	98.20	98.13	98.51
Compaction Required	98%	98%	98%

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Authorised Signatory

ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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TEJUS
CONSULTANTS

TEST REPORT	
Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra,
Consultants	Tejus Consultants, Bangalore
Contractor	Sri. M.S Venkatesh

SIEVE ANALYSIS

Total Weight:	3000	gms			
Type of Material	Sand/M sand		Proposed Use	Drain	
Sample Location	At site/Plant		Date of Sampling	19/7/2018	
			Date of Testing	19/7/2018	

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-III)
10.00 mm	0	0	0	100.00	100
4.75 mm	225	225	7.50	92.50	90 - 100
2.36 mm	325	550	18.33	81.67	75 - 100
1.18 mm	575	1125	37.50	62.50	55 - 90
0.600 mm	545	1670	55.67	44.33	35 -59
0.300 mm	590	2260	75.33	24.67	8-30
0.150 mm	675	2935	97.83	2.17	0 - 10
Pan	65	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

Consultant's Representative

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತ
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-24

TEJUS
CONSULTANTS

TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Divisi
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri M.S Venkatesh
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	Plant			Date of Sampling	19/7/2018
				Date of Testing	19/7/2018
IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	100	100	3.33	96.67	95-100
20.00mm	1315	1415	47.17	52.83	30-70
10.00mm	1260	2675	89.17	10.83	10-35
4.75mm	290	2965	98.83	1.17	0-5
Pan	35	3000	100.00	0.00	

Remarks : ✓ Satisfactory / Not Satisfactory

Consultant's Representative

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Test Report on Cement

Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Divisi.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri. M.S Venkatesh
Sample ID	Cement
Date of Sample Tested	19/07/18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	40 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	355 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	5mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri. M.S Venkatesh

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	sand/M sand		Proposed Use		Drain
Location/Source	At site/Plant		Date of Sampling		19/07/18
Period of Soaking	24 hours		Date of Testing		19/07/18

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	647	662	664	
B	Weight of oven - dry sample gm.	638	658	656	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1681	1692	1692	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.647	2.686	2.656	2.663
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.411	0.608	1.220	1.079

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Test Report on Cement

Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.M.S Venkatesh
Sample ID	Cement
Date of Sample Tested	25/07/18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	38 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	370 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	6mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.	
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	Sri.M.S Venkatesh	
Total Weight:	9500	gms

SIEVE ANALYSIS

Type of Material	20 mm down size	Proposed Use	Drain
Sample Location	Plant/ At site	Date of Sampling	25/07/18
		Date of Testing	25/07/18

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
40.00 mm	0	0	0	100	100
20.00 mm	260	260	2.74	97.26	95 - 100
10.00 mm	5400	5660	59.58	40.42	25 - 55
4.75 mm	3415	9075	95.53	4.47	0 - 10
Pan	425	9500			

Remarks : ✓ Satisfactory / Not Satisfactory

Consultant's Representative

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra,				
Consultants	TEJUS CONSULTANTS				
Contractor	Sri.M.S.Venkatesh				
Total Weight:	10000	gms			

SIEVE ANALYSIS

Type of Material	12.5 mm down size		Proposed Use	Drain	
Sample Location	Plant		Date of Sampling	25/07/18	
			Date of Testing	25/07/18	
IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	580	580	5.80	94.20	90-100
10.0	3502	4082	40.82	59.18	40-85
4.75	5801	9883	98.83	1.17	0-10
Pan	117	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.M.S.Venkatesh

SPECIFIC GRAVITY AND WATER ABSORPTION
FINE AGGREGATE (IS-2386-PART-3)

Type of Material	sand/M sand	Proposed Use	Drain
Location/Source	At site/Plant	Date of Sampling	25/07/18
Period of Soaking	24 hours	Date of Testing	25/07/18

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	644	665	664	
B	Weight of oven - dry sample gm.	638	658	656	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1681	1692	1692	
E	Bulk specific gravity B / (C + A - D)	2.681	2.653	2.656	2.663
G	Absorption (%) (A - B) *100 / B	0.940	1.064	1.220	1.075

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2018

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya La Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Consultants	Tejus Consultants, Bangalore
Contractor	Sri.M.S.Venkatesh

SIEVE ANALYSIS

Total Weight:	3000	gms			
Type of Material	Sand/M sand		Proposed Use	Drain	
Sample Location	At site/Plant		Date of Sampling	25/07/18	
			Date of Testing	25/07/18	

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	221	221	7.37	92.63	90 - 100
2.36 mm	326	547	18.23	81.77	75 - 100
1.18 mm	577	1124	37.47	62.53	55 - 90
0.600 mm	535	1659	55.30	44.70	35 -59
0.300 mm	589	2248	74.93	25.07	8-30
0.150 mm	680	2928	97.60	2.40	0 - 10
Pan	72	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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TEJUS
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Test report on Compressive strength of concrete cubes

Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.M.S.Venkatesh
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	25/07/18	01/08/18	7 days	8.240	22500	298	13.24	13.26
2	25/07/18	01/08/18	7 days	8.330	22500	297	13.20	
3	25/07/18	01/08/18	7 days	8.324	22500	300	13.33	

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ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

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Test report on Compressive strength of concrete cubes

Project	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.M.S.Venkatesh
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	25/07/18	21/08/18	28 days	8.340	22500	452	20.09	20.19
2	25/07/18	21/08/18	28 days	8.350	22500	453	20.13	
3	25/07/18	21/08/18	28 days	8.330	22500	458	20.36	

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PRECAST SLAB (CORE) TEST REPORT		
Client	:	Bruhat Bangalore Mahanagara Palike
Contractor	:	Sri.M.S Venkatesh
Name of Work	:	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
No.of Sample Tested	:	3
Date of Testing	:	27/07/18
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20} . 250mm Thick

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	100.00	180.00	3.480	2461.60	1.80	0.960	159.95	20.37	21.99	21.11	26.39
2	100.00	180.00	3.495	2472.21	1.80	0.960	159.80	20.35	21.97	21.10	26.37
3	100.00	180.00	3.500	2475.74	1.80	0.960	160.00	20.37	22.00	21.12	26.40

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory.
3. Any Query regarding the report must be reported reported within 15 days from the date of testing.

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Consultant's Representative

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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	**Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.**		
Client	**BRUHAT BANGALORE MAHANAGARA PALIKE**		
Consultant	**M/s Tejus Consultants**		
Contractor	**Sri.M.S Venkatesh**		
Proposed Use	BC	**Date of Sampling**	**01/08/2018**
Sample Location	At plant	**Date of Testing**	**01/08/2018**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	380.00	378.00	375.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	292.00	288.00	291.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	88.00	90.00	84.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	23.16	23.81	22.40	
5	Average Aggregate impact value	(%)	23.12			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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TEJUS CONSULTANTS

Authorised Signatory

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project :	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor:	Sri.M.S Venkatesh

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	01/08/2018
		Date of Testing	01/08/2018

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	665	88	665	65
16.0	12.5	1200	115	1222	89
12.5	10.0	666	69	656	129
10.0	6.3	632	75	585	98
Total		3163	347	3128	381

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.97
Elongation Index(%):	12.18
Combined FI+EL (%)	23.15

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GRADATION FOR BC
(As per MORT&H 500-17,Grading-2)

Name of Work	:	**Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.**
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	**Sri.M.S Venkatesh**
Date of Testing	:	01/08/2018
Type of Mix	:	BC
Sample I/D	:	BC3

Sample Location:	At plant	Date of Sampling:	01/08/2018
Type of material & Purpose:	BC	Date of testing:	01/08/2018
		Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	99	99.0	8.25	91.75	90 - 100
9.50	111	210.0	17.50	82.50	70 - 88
4.75	220	430.0	35.83	64.17	53 - 71
2.360	165	595.0	49.58	50.42	42 - 58
1.180	147	742.0	61.83	38.17	34 - 48
0.600	132	874.0	72.83	27.17	26 - 38
0.300	78	952.0	79.33	20.67	18 - 28
0.150	52	1004.0	83.67	16.33	12 - 20
0.075	115	1119.0	93.25	6.75	4 - 10
Pan	81.0				
Total	1200.0				

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX	
Name of Work :	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri.M.S Venkatesh
Date of Testing :	04/08/2018
Type of Mix :	BC
Sample I/D :	BC1

DETERMINATION OF BITUMEN CONTENT		
Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	980	986
2. Weight of Mixture after extraction, g	928	932
3. Weight of Bitumen	52	54
4. Weight of filter paper before extraction, g	4.00	4.00
5. Weight of filter paper after extraction, g	5.00	5.00
6. Weight of fines, g	1.00	1.00
7. Weight of Bitumen & fines	53.00	55.00
8. Bitumen content in %	5.41	5.58
9. Average Bitumen content in %	5.49	
10. Minimum Bitumen content in %	5.40	

GRADATION FOR BC AFTER EXTRACTION
(As per MORT&H 500-17,Grading-2)

Sample Location:	At site	Date of Sampling:	04/08/2018
Type of material & Purpose:	BC	Date of testing:	04/08/2018
		Oven Dry Wt.(gms):	928.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	78	78.0	8.41	91.59	90 - 100
9.50	135	213.0	22.95	77.05	70 - 88
4.75	156	369.0	39.76	60.24	53 - 71
2.360	147	516.0	55.60	44.40	42 - 58
1.180	99	615.0	66.27	33.73	34 - 48
0.600	55	670.0	72.20	27.80	26 - 38
0.300	77	747.0	80.50	19.50	18 - 28
0.150	58	805.0	86.75	13.25	12 - 20
0.075	78	883.0	95.15	4.85	4 - 10
Pan	45.0				
Total	928.0				

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DETERMINATION OF RATE OF SPREAD TACK COAT

Name of Work :	Improvements to Roads, and Drains at Nagawara Village, Chanakya Layout, Manjunatha Nagar and Sorrounding Area in ward No 06 Thanisandra, Byatarayanapura Sub Division.
Client :	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant :	M/s Tejus Consultants
Contractor :	Sri.M.S Venkatesh
Date of Testing :	04/08/2018
Type of Mix :	Tack coat
Sample I/D :	1

Determination	Unit	Test No		
		1	2	3
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.870	0.870	0.870
Final weight of plate after application of tack Coat (c)	Kg	0.891	0.895	0.893
Weight of tack Coat (d=c-b)	Kg	0.021	0.025	0.023
Rate of spread of tack coat	Kg/sq.m	0.233	0.278	0.256
Average	Kg/sq.m	0.256		
Specified Limit	Kg/sq.m	0.250 Kg/sq.m		

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